PORSF
11.3.31.1.1 #29 EOK

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

May 14, 2001

Mr. Joe Mollusky
Port of Portland
Box 3529
Portland, OR 97208

Re: DEQ Cleanup Standards
Marine Terminal 1 South
Portland Oregon
ESCI No. 2642

Dear Mr. Mollusky:

This letter is in response to your inquiry requesting an explanation of how the Oregon Department of Environmental Quality (DEQ) would select cleanup standards and a final remedial action for the Marine Terminal 1 South site. The letter provides a brief overview of these processes. More information (e.g., DEQ statutes, rules, and guidance documents) can be found on our website at http://www.deq.state.or.us/wmc/cleanup/curules.htm.

Risk Screening and Reference Levels. DEQ uses Environmental Protection Agency (EPA) Region 9 Preliminary Remediation Goals (PRGs) as reference levels for risk screening until site specific risk-based goals are developed in a formal site risk assessment. PRGs are conservative risk-based reference levels for evaluating potential risks to human health at contaminated sites and are used to streamline the cleanup decision-making process. PRG concentrations can be used to screen pollutants in environmental media, trigger further investigation, and provide an initial cleanup goal if applicable. Region 9 PRGs combine current EPA toxicity values with standard exposure factors to estimate contaminant concentrations in environmental media (soil, air, and water) that are considered protective of humans, including sensitive groups, over a lifetime. EPA Region 9 PRG concentrations are based on exposure pathways for which generally accepted methods, models, and assumptions have been developed (i.e. ingestion, dermal contact, and inhalation) for residential or industrial land-use conditions. Chemical concentrations above these levels would not automatically trigger a response action; however, exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate. Further evaluation may include additional sampling, consideration of ambient levels in the environment, or a reassessment of the assumptions contained in these screening-level estimates. PRG tables developed by EPA Region 9 can be downloaded at http://www.epa.gov./region09/waste/sfund/prg/index.html.

Selection of Cleanup Standards. DEQ uses risk-based cleanup standards as cleanup criteria. The cleanup standards are developed on a site by site basis using risk assessment protocols defined in Oregon rule (OAR 340-122-084); risk-based numeric soil cleanup levels specified in OAR 340-122-045; risk-

based cleanup standards developed as part of an approved generic remedy; or for areas where hazardous substances occur naturally, the background level of the hazardous substances, if higher than "protective levels." Acceptable risk levels (i.e., protective) are defined as a 1×10^{-6} (one in a million) excess cancer risk for individual carcinogens or a hazard index of 1 for noncarcinogens. The potential cancer risk and hazard index are a measure of potential risks posed by an individual hazardous substance. These risks are evaluated following Oregon's risk assessment rules that include consideration of:

- Exposure concentrations (e.g., contaminant concentrations);
- Toxicity of contaminants;
- Exposure pathways (e.g., inhalation, ingestion, direct contact);
- Potential receptors (e.g., human, ecological); and
- Exposure scenarios based on current and reasonably likely future land and water uses at the facility and surrounding properties.

Oregon statute also requires that potential adverse effects to ecological receptors be considered. DEQ has divided the ecological risk assessment process into four levels. Decision points are incorporated into each level to facilitate the process. The Level I assessment is a conservative qualitative determination of whether there is any reason to believe that ecological receptors and/or pathways are present or potentially present at or in the locality of the facility.

Selection of a Remedial Action. Under Oregon's cleanup law a remedial action may achieve protection through risk reduction or by risk management. Risk reduction usually means reducing concentrations of contaminants either by treatment that eliminates or reduces the toxicity, mobility, or volume of the hazardous substances or excavation and off-site disposal. Risk management often means containment (e.g., capping, fencing, slurry walls); or access restrictions (e.g., institutional controls, deed restrictions, public notices).

Cleanup or remedial actions are selected by DEQ based on a set of balancing factors defined in Oregon Statute and rule (OAR 340-122-090). However, all cleanup actions must be protective (see above) of current and future risks to human health and the environment. The final remedial action is based on the evaluation of effectiveness, reliability, implementability, implementation risk, and cost reasonableness of potential cleanup alternatives in a site specific Feasibility Study (FS).

The selection of cleanup standards and remedial actions are based on site-specific findings and facts and therefore may include intricacies not presented above.

Hot Spot Treatment or Removal. Oregon rules include a preference for treatment (i.e., the actual reduction of concentrations) or removal of hot spots. A hot spot exists if the site presents an unacceptable risk and if the contamination is highly concentrated, highly mobile or cannot be reliably contained. The assessment of "highly concentrated" soil hot spots is performed by comparing the concentration of each individual site contaminant to its "highly concentrated" hot spot level. The "highly concentrated" hot spot levels are risk-based concentrations corresponding to a given multiplier of the acceptable risk level. DEQ has developed hot spot levels that are published in DEQ's *Pre-Calculated Hot Spot Look-Up Tables*, dated October 20, 1998.

Application to Terminal 1 South. PRGs for residential soil are considered conservative initial cleanup goals for the Terminal 1 South site until which time a site specific risk assessment is conducted that develops site-specific risk levels cleanup goals (based on potential risk to human health or ecological receptors). DEQ would likely require soil with contaminant concentrations above highly concentrated hot spot levels for residential land use to be removed or treated as part of a remedial action, as long as the Terminal 1 South site were developed to include residential use. Soil with contaminant concentrations above risk-based cleanup levels would require some remedial action to protect human health and the environment. Remedial actions at Terminal 1 South may include one or a combination of the following alternatives: 1) engineering controls by capping; 2) institutional controls through land or groundwater use restrictions: 3) treatment and/or removal; 4) no action; or 5) other alternatives not listed. The cleanup standard would be determined in a site-specific risk assessment based on the planned future use of the property. DEQ understands the proposed future use of the property is to be mixed residential and commercial. Soil with contaminant concentrations below risk-based cleanup levels would pose acceptable risk to human health or the environment and no cleanup would be required. The final remedial action for Terminal 1 South would be evaluated by a feasibility study and determined by an Oregon DEQ Record of Decision that includes a public comment process. A removal action could be performed at any time during the regulatory process.

Please feel free to call me with any questions or concerns at (503) 229-5562.

Sincerely,

Rodney G. Struck, R.G.
Project Manager
Voluntary Cleanup and Portland Harbor Section

cc: ESCI File No. 2642
Bill Bach, Port of Portland
Tim Ralston, Ralston Investments
Jennifer Sutter, DEQ/NWR

cc: David Ashton
Suzanne Brooks
Peggy Kraus
Nancy Manway
Lucy Tang - HAF
Pamela Boody-Heine
Anne Summers